

Jupiter, No. 119 replicas to roll soon

PROMONTORY, Box Elder County — Late this year, replicas of the most expensive trains ever built will be delivered here by flat-bed truck from a Los Angeles suburb.

They are full-sized, nearly exact replicas of the old Number 119 and the Jupiter, the locomotives that made the connection here May 10, 1889, when the first transcontinental railroad was completed.

For \$1.5 million, O'Connor Engineering Laboratories of Costa Mesa, Calif., is fabricating the huge copies for the National Park Service. They will be displayed at Golden Spike National Historic Site and will be used each May 10 in a reenactment of the golden spike ceremony. They will also be shown each day during the summer.

Since 1970 the historic site has had two locomotives dating from the last century on display. Neither looks much like the old 119 or Jupiter, and now the state of Nevada, which loaned them to the Park Service, wants them back.

So the replicas are being built to the exact specifications of the 119 and Jupiter, which were scrapped about the turn of the century. They are to be nearly exact copies, down to the bright red paint, copper trim and the tonal quality of their bells.

Researchers have studied every known photo of the old locomotives. Four specialists worked full-time for more than a year researching data, including isolated bits of information from old manuals describing the internal workings of the steam engines of the times.

More than 600 scale drawings were prepared for the job, including each stove of the cowcatcher, complete with dimensions, tolerances, material, heat treatment and finish.

Chadwell O'Connor, president of the company which is making the copies, was quoted by the Park Service as saying, "It's not as difficult as it might seem. First of all, builders of equipment didn't put in parts that don't have a function. So you analyze the function and work backward."

For example, if a photo showed a valve gear on the old train, the researchers knew that it performed a specific job in a steam engine. They knew the amount of space in which the equipment was confined, also.

"Once we know its function and the space it requires, we know what it must look like. All we have to do, then, is build it. That's exactly what we did," he said.

According to the National Park

Service, not every part required casting a completely new piece from scratch. The old trains had nuts, bolts, fittings that were indistinguishable in appearance and function from those in use now.

Park Service officials said the new trains will differ in three main ways from the originals: they will be made of

modern alloys instead of carbon steel; they will burn oil instead of wood and coal; they will use welded boilers, instead of riveted ones.

"For the sake of visual integrity, however, the boilers will display dummy rivets and the tenders will be loaded with coal (in 119) and wood (in Jupiter)," said Park Service spokesman Jim Harpster.